

WHAT IS CLAIMED:

1. A method of driving a display, comprising the steps of:
 - determining a resultant value based on a first drive signal input at a first time and a previous drive signal input at a time previous to the first time; and
 - modulating a second drive signal, input at a second time that is subsequent to the first time, based on the determined resultant value to produce a corrected second drive signal for a pixel, so as to facilitate a tone transition from the first time to the second time.
2. The method of claim 1, wherein the resultant value is one of a corrected first drive signal and an uncorrected first drive signal.
3. The method of claim 1, further comprising:
 - storing current video data related to the first drive signal with previous video data related to the previous drive signal,
 - wherein the step of determining further includes determining the resultant value based on the stored current and previous video data.
4. The method of claim 1, wherein
 - the previous, first, and second drive signals are embodied as one or more frames of video data, and
 - the determining step further includes predicting a grayscale level reached by a pixel as a result of a grayscale level transition from previous video data of the previous drive signal to current video data of the first drive signal to correct the current video data of the first drive signal.
5. The method of claim 4, wherein
 - the step of modulating further includes correcting video data of the second drive signal based on the corrected first drive signal to obtain the corrected second drive signal, so as to facilitate a grayscale level transition of the pixel from a current frame of the first drive signal to a next desired frame of the second drive signal.

6. The method of claim 3, wherein

the resultant value is one of a corrected first drive signal and an uncorrected first drive signal, and

the determining step is dependent on a given combination of the previous data and current data.

7. The method of claim 6, wherein

the determining step further includes correcting current video data of the first drive signal to obtain the corrected first drive signal, if a combination of the previous video data and current video data is the given combination,

else, the determining step further includes outputting the uncorrected first drive signal.

8. The method of claim 6, wherein the given combination represents a correction amount to be applied to correct the first drive signal, the determining step further including altering the correction amount based on one of temperature and video type.

9. The method of claim 8, further comprising

stopping the step of altering, if one of a video type and temperature satisfies a given threshold condition.

10. The method of claim 1, wherein

the first drive signal is further comprised of current video data and the previous drive signal is further comprised of previous video data, and

the step of determining includes correcting the current video data so as to indicate a higher grayscale level than a grayscale level predicted as having been reached by the pixel in the grayscale level transition, if a determined grayscale level based on current video data and previous video data falls in a transition from a previous grayscale level to the current grayscale level.

11. The method of claim 6, wherein:

the previous video data and the current video data have a given combination of bit width that is set to a desired value, the desired value being smaller than twice the bit width of a next desired video data for the second drive signal, and

the bit width of the previous video data is less than or equal to the bit width of the current video data; and

a restricted bit width is stored so that the given combination of bit width assumes the desired value.

12. A display, comprising:

means for determining a resultant value based on a first drive signal input at a first time and a previous drive signal input at a time previous to the first time; and

means for modulating a second drive signal, input at a second time that is subsequent to the first time, based on the determined resultant value to produce a corrected second drive signal for a pixel, so as to facilitate a tone transition from the first time to the second time.

13. A computer program product comprising a computer-readable medium having computer program logic stored thereon for enabling a processor of the product to drive a display, the computer program logic causing the processor to perform the steps of:

determining a resultant value based on a first drive signal input at a first time and a previous drive signal input at a time previous to the first time; and

modulating a second drive signal, input at a second time that is subsequent to the first time, based on the determined resultant value to produce a corrected second drive signal for a pixel, so as to facilitate a tone transition from the first time to the second time.

14. A program, adapted to cause a computer to execute the method of claim 1.

15. A computer-readable storage medium, on which is recorded a program adapted to cause a computer to execute the method of claim 1.

16. A display, comprising:

a correction section for determining a resultant value based on a first drive signal input at a first time and a previous drive signal input at a time previous to the first time; and

a processing section for modulating a second drive signal, input at a second time that is subsequent to the first time, based on the resultant value received from the correction section to produce a corrected second drive signal for a pixel, so as to facilitate a tone transition from the first time to the second time.

17. The display of claim 16, wherein the resultant value is one of a corrected first drive signal and an uncorrected first drive signal.

18. The display of claim 16, further comprising:

a memory storing current video data related to the first drive signal with previous video data related to the previous drive signal,

wherein the correction section determines the resultant value based on the stored current and previous video data.

19. The display of claim 16, wherein

the previous, first, and second drive signals are embodied as one or more frames of video data, and

the correction section further predicts a grayscale level reached by a pixel as a result of a grayscale level transition from previous video data of the previous drive signal to current video data of the first drive signal, so as to correct the current video data of the first drive signal.

20. The display of claim 19, wherein

the processing section corrects video data of the second drive signal based on the corrected first drive signal to obtain the corrected second drive signal, so as to facilitate a grayscale level transition of the pixel from a current frame of the first drive signal to a next desired frame of the second drive signal.

21. The display of claim 18, wherein

the resultant value is one of a corrected first drive signal and an uncorrected first drive signal, and

the correction section determines the resultant signal based on a given combination of the previous data and current data.

22. The display of claim 21, wherein

the correction section corrects current video data of the first drive signal to obtain the corrected first drive signal, if a combination of the previous video data and current video data is the given combination,

else, the correction section outputs the uncorrected first drive signal.

23. The display of claim 21, wherein

the given combination represents a correction amount to be applied to correct the first drive signal, and

the correction section alters the correction amount based on one of temperature and video type.

24. The display of claim 23, wherein the correction section ceases altering the correction amount if one of a video type and temperature satisfies a given threshold condition.

25. The display of claim 21, wherein:

the previous video data and the current video data have a given combination of bit width that is set to a desired value, the desired value being smaller than twice the bit width of a next desired video data for the second drive signal, and

the bit width of the previous video data is less than or equal to the bit width of the current video data; and

a restricted bit width is stored so that the given combination of bit width assumes the desired value.

26. The display of claim 16, wherein

the first drive signal is further comprised of current video data and the previous drive signal is further comprised of previous video data, and

the step of determining includes correcting the current video data so as to indicate a higher grayscale level than a grayscale level predicted as having been reached by the pixel in the grayscale level transition, if a determined grayscale level based on current video data and previous video data falls in a transition from a previous grayscale level to the current grayscale level.

27. The display of claim 16, wherein:

the first drive signal is further comprised of current video data and the previous drive signal is further comprised of previous video data, and

the correction section includes a lookup table containing grayscale levels for corrected current video data that is associated with combinations of the previous video data and the current video data; and

a bit width of a grayscale level contained in the lookup table for the current video data is set to the smaller of a bit width of a grayscale level for the previous video data and a bit width of a grayscale level for the current video data.

28. The display of claim 27 wherein:

the lookup table contains a grayscale level for the corrected current video data that corresponds to a given one of a plurality of grayscale level combinations of previous video data and the current video data; and

the correction section includes a control section for interpolating between the grayscale levels of the lookup table for the corrected current video data to calculate grayscale levels for the corrected current video data that corresponds to the combination of previous video data and current video data.

29. The display of claim 16, wherein

the first drive signal is further comprised of current video data and the previous drive signal is further comprised of previous video data, and

the correction section includes a lookup table containing grayscale levels for corrected current video data that corresponds to a given combinations of the

previous video data and the current video data, and which contains grayscale levels indicated by the current video data in association with other combinations.

30. The display of claim 16, wherein

the first drive signal is further comprised of current video data and the previous drive signal is further comprised of previous video data, and the correction section further includes:

a plurality of lookup tables, each lookup table directed to a different given temperature range and containing grayscale levels for corrected current video data associated with combinations of the previous video data and the current video data; and

a control section for selecting one of the lookup tables for use in correction of the current video data based on temperature.

31. The display of claim 30, wherein

the control section selects at least one of the lookup tables in accordance with a video data type.

32. The display of claim 30, wherein:

the current video data and the previous video data stored in the memory have a combined bit width restricted to a given value; the control section adapted for altering bit widths of the current video data and previous video data in accordance with temperature of a pixel.

33. The display of claim 16, wherein

the first drive signal is further comprised of current video data and the previous drive signal is further comprised of previous video data,

the current video data and the previous video data stored in the memory section have a combined bit width restricted to a given value; and

the current video data and the previous video data stored in the memory section bit widths are adapted to be altered in accordance with a video data type.

34. The display of claim 18, wherein:

the second driving signal is further composed of video data that is 8 bits wide for each of three primary colors; and

one of the previous video data and current video data has its bit width restricted when stored in the memory, so that the previous video data and the current video data have a combined bit width of 10 bits for each one of the primary colors.

35. The display of claim 18, wherein

the pixel is a liquid crystal element of normally black, vertical align mode.